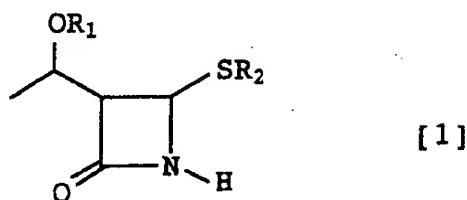


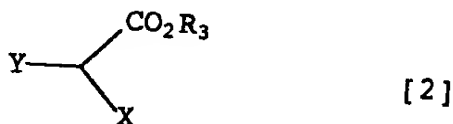
B' which comprises reacting an azetidinone derivative represented by the formula (1):



wherein  $OR_1$  is a protected hydroxyl group;  $R_2$  is a substituted or unsubstituted alkyl group, a substituted or unsubstituted alkenyl group or a substituted or unsubstituted aromatic group, in the presence of:

(a) a copper compound selected from the group consisting of copper oxides, copper halides, salts of copper with [organic] aliphatic and aromatic carboxylic acids, salts of copper with mineral acids and complexes of cuprous halides, or

(b) a mixture of zinc with at least one of said copper compounds with an ester compound represented by the formula (2):



wherein  $CO_2R_3$  is an esterified carboxyl group [selected from the group consisting of tri-substituted silyl esters, tri-substituted silyl lower alkyl ester, aromatic heterocyclic esters, lower alkyl esters, lower alkanoyloxy lower alkyl esters, lower alkanesulfonyl lower alkyl esters, mono or di or tri halo lower

alkyl esters, lower alkoxy carbonyloxy lower alkyl esters, phthalidylidene lower alkyl esters, 5-lower alkyl-2-oxo-1, 3-dioxolene-4-yl lower alkyl esters, lower alkenyl esters, lower alkynyl esters, aryl lower alkyl esters, aryl esters and phthalidyl esters which may optionally be substituted;] with  $R_3$  being a protective group easily removed therefrom;

wherein X and Y are the same or different and represent individually a substituted or unsubstituted alkyl group, a substituted or unsubstituted alkenyl group, a substituted or unsubstituted aralkyl group, a substituted or unsubstituted aryl group, a substituted or unsubstituted alkylthio group, a substituted or unsubstituted alkenylthio group, ~~a substituted or unsubstituted aralkylthio group~~, a substituted or unsubstituted arylthio group, a substituted or unsubstituted alkoxy group, a substituted or unsubstituted alkenyloxy group, a substituted or unsubstituted aralkyloxy group, a substituted or unsubstituted aryloxy group, a substituted or unsubstituted silyloxy group, a substituted or unsubstituted heterocyclic group, a substituted or unsubstituted heterocyclic-thio group, a substituted or unsubstituted heterocyclic-oxy group, a substituted or unsubstituted acyl group, { carboxyl, alkenyloxycarbonyl, aralkyloxycarbonyl, aryloxycarbonyl,

thiocarboxyl, alkylthiocarbonyl, alkenylthiocarbonyl,  
aralkylthiocarbonyl, arylthiocarbonyl, a substituted or  
B<sup>1</sup> unsubstituted aminocarbonyl group, a substituted or unsubstituted  
amino group, a hydrogen atom or a halogen atom, or, when taken  
C<sup>2</sup> together with the ~~same~~ carbon to which they are attached, form a  
substituted or unsubstituted cycloalkan-2-on-1-yl group;

wherein any substituents on [R<sub>3</sub>] R<sub>2</sub> are selected from the  
group consisting of halogen, lower alkyl, monocyclic or polycyclic  
alkyl, lower alkoxy, carboxyl, amino, nitro, cyano, hydroxy, aryl  
C<sup>26</sup> of 6 to 10 carbon atoms and aralkyl groups of 7 to <sup>24</sup>~~14~~ carbon  
atoms;

[wherein any substituents on R<sub>3</sub> are selected from the group  
consisting of lower alkyl, monocyclic or polycyclic alkyl, lower  
alkoxy, carboxyl, amino, nitro, cyano, hydroxy, aryl of 6 to 10  
carbon atoms, aralkyl of 7 to 24 carbon atoms, heterocyclic, acyl,  
carboxyl, alkyloxycarbonyl, alkenyloxycarbonyl, aralkyloxycarbonyl  
and aryloxycarbonyl groups;]

wherein any substituents on X and Y are selected from the  
group consisting of halogen, carboxyl, formyl, nitro, cyano,  
hydroxyl, amino, lower alkyl, monocyclic and polycyclic alkyl,  
lower alkenyl, aryl of 6 to 10 carbon atoms, aralkyl of 7 to 24  
carbon atoms, alkylthio, alkenythio, aralkythio, arylthio,